



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/535,176

12/19/2005

Jean Beguinot

Q88032

2368

23373 7590 03/18/2008  
SUGHRUE MION, PLLC  
2100 PENNSYLVANIA AVENUE, N.W.  
SUITE 800  
WASHINGTON, DC 20037

EXAMINER

YEE, DEBORAH

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

03/18/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/535,176	<b>Applicant(s)</b> BEGUINOT ET AL.	
	<b>Examiner</b> Deborah Yee	<b>Art Unit</b> 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/17/05</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. The Restriction requirement dated December 12, 2007 has been withdrawn upon further reconsideration.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 8 to 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese patent 10-324952 (JP'952).
4. The English abstract of JP'952 discloses steel alloy with constituents whose wt% ranges overlap those recited by the claims; such overlap renders Applicants' composition prima face obvious since it would be obvious for one skilled in the art to select the claimed alloy wt% ranges over the broader disclosure of the prior art since the prior art teaches similar utility (machine structural work piece) and similar properties of high hardness, high toughness, and machinability.
5. In addition, paragraph [0051] in the computer-generated English translation of JP'952 teaches a microstructure of not less than 80% martensite with a balance that can be bainite and retained austenite, and paragraph [0027] teaches the formation of carbides within the microstructure. Hence prior art would suggest the claimed

Art Unit: 1793

microstructure comprising martensite or martensite-bainite with 5 to 20% retained austenite and carbides.

6. More specifically, JP'952 teaches specific example 15 in table 2 that meets the claimed composition and when calculated, satisfy or closely satisfy the claimed relationships. Note when calculated,  $C-Ti/4-Zr/8+7xN/8 = 0.14246 \geq 0.095$ ; and  $Ti + Zr/2 - 7xN/2 = 0.3298 > 0.05$ . Also when calculated,  $1.05 \times Mn = 0.54 \times Ni + 0.50 \times Cr + 0.3 \times (Mo + W/2)^{1/2} = 1.4$ , which is slightly lower than 1.8. Since Applicants have not demonstrated (e.g. by comparative test data) that more than 1.8 is somehow critical and productive of new and unexpected results, then claim would not patentably distinguish over prior art.

7. In addition prior art example 15 contains 0.23%C which closely approximates C range of  $\leq 0.22$  recited by claim 10 and satisfies the relationships recited by claims 10 and 11. Also it would be obvious to lower C in example 15 since a broad C range of 0.1-0.6% is taught.

8. With regard to claim 12, prior art teaches 0.05 to 1.5% Si and 0.005-0.05% Al that overlap and suggest  $Si+Al \geq 0.7\%$ .

9. Paragraph [0059] in English translation teaches hot working steel to a diameter (equivalent to thickness) of 20mm and 60 mm that are within the thickness range of 2 mm to 150 mm recited by claim 13.

10. The unapplied references have been cited to further depict the state of the art in related steel alloys. Inventive Claims are patentably distinct over unapplied references.

***Claim Rejections - 35 USC § 112***

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claim 1 to 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

13. Parent claim 1 recites “for example” and “in particular” which are indefinite and should be omitted. Also process steps need to be actively recited, e.g. instead of “cooled”, it should be ---cooling---.

14. Claims 2 to 9 depend on claim 1 and are rejected for the same reasons as claim 1.

***Allowable Subject Matter***

15. Claim 1 to 9 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

16. The following is a statement of reasons for the indication of allowable subject matter: The art of record does not teach or fairly suggest the method for producing a work piece or plate of steel alloy having a defined composition with defined relationships, as recited by claims 1 to 9, comprising the steps of heating plate or work piece to elevated temperature by hot forming in the hot state or after austenitization by reheating in a furnace followed with cooling at a mean rate greater than 0.5C/s between a temperature greater than Ac3 and a temperature of from approximately T= 800-

Art Unit: 1793

$270xC^*-90xMn-37xNi-70xCr-83x(Mo + W/2)$  to T-50C whereby  $C^* = C-Ti/4 - Zr/8 + 7xN/8 \geq 0.095$ , the work piece or plate is then subjected to cooling at a mean core cooling rate  $V_r < 1150 \times e_p^{-1.7}$  greater than 0.1C/s between the temperature T and 100C,  $e_p$  being the thickness of the plate expressed in mm, and then subjected to further cooling as far as ambient temperature with optional planishing .

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on monday-friday 6:00 am-2:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Deborah Yee/  
Primary Examiner  
Art Unit 1793

/DY/